RAANZ

Recreational Pilot e-zine

Issue 90
January 2015

From the President

Rodger Ward

I would like to take this opportunity to wish everyone a Safe and enjoyable Festive season and New Year.

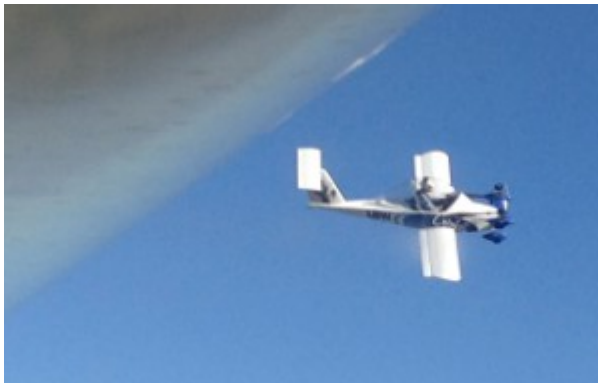
Keep an eye on the weather, watch out for fading daylight for those last flights of the day and be very careful trying to do something you have not practised for a while just because you have a bit of holiday time up your sleeve.

Some of you may be aware of a recent CAA safety report on light aircraft accidents and fatalities. On a pure number basis we are not doing too well. No mention is made of accidents per hour flown but an accident is an accident and a fatality is a fatality.

Please remember to that RAANZ is a group of people organised with a common objective of facilitating the safe and affordable operation of recreational aircraft. As such if you are aware of any area where we can improve or if you have any areas of concern please do not hesitate to contact me- pres@raanz.org.nz If there is potentially bad news out there I would like to know before the press or the director do.

Remember also that the National Fly in is being held weekend 7-8 March at Waipukurau. This event is always well attended and is a highlight of our calendar. Start making those bookings and getting time off .

Having said all that here is a brief account of one of the more interesting aircraft I have had the privilege of being allowed to fly.



The Cri Cri arrived in my hangar at Rangiora in September 2012. My son had seen the aircraft at Sportavex in Tauranga many years ago and had an invitation to sit in it. When LBW came on the market he decided he had to have it.

The design has recently had it's 40th birthday and is the brainchild of Michael Columbine, father also of the Banbi. Both share very similar design concepts, and when placed side by side are indeed similar.

It is a complex little aircraft with it's square sided fuselage hiding a lot of intricate bits and pieces underneath. The aircraft relies on some quite wizzy aerodynamics so does need to be quite precisely built. This will take some time. I think LBW took around 15 years!

LBW has an empty weight of 87 kilos and a normal MAUW of 190. For aeros the MAUW is 170! Any added that is not in the drawings could see the empty weight increase quite easily. Fuel load is 21 litres so there is not a lot left over. The 21 litres does not seem a lot but with the engines

throttled back to 4900 it has a consumption of 7 litres per hour, that's total not each, with a cruise speed of 90 knots. Cruising up to 110 kts is relatively easy with fuel burn increasing quite rapidly. However after flying straight and level for only a short period the aircraft screams "BORING lets go yahoo like I'm designed to do!"

The aircraft is very strong, ultimate loading being +9 -4. The very good roll rate , 180 deg / second, and generally light controls enable GGG's to be pulled very easy. The odd quick steep turn and pull have had me going a little on the dark side.

The control surfaces are all artificially loaded. Elevator has a significant amount of bungee to load it up and provide a trimming mechanism. This works very well and pitch wise the aircraft is solid and stable. The rudder has a small amount of bungee in it, probably could do with some more as the aircraft's directional stability is neutral a la some Rans S6 eg JOL. You are on your feet the whole time. The aileron system has a nifty little trim at the base of the stick where rubber bands are used to load the system and are adjustable side to side to provide some trim. The aileron trim is hardly needed but the loading up is quite nice. Roll wise the aircraft is probably just stable but attention is needed as a quick glance inside to check something can result in the world changing it's perspective quite a lot when you look out again. It is an aircraft you have to fly all the time,which is quite fun really.

The Cri Cri has a speed range of 40kts (Vs) to 135 (VNE) Vy (best r ate of climb) 65 kt Vf (max flap) 70kts. Va is 100kts.

The take off roll can sometimes be quite long depending on the length of grass and the hardness of the soil. Acceleration from the two 15 hp JPX two strokes is minimal until about 40 kts is reached where we experience sort of a slingshot effect and it is all on. I have not yet done a sealed runway departure but I suspect it would be remarkably different. Climb out at 70 kts will give around 1000 fpm, normal approach starts out at 60 back to 50 over the fence, The flare has to be quite close to the ground as any prolonged hold off can result in a sudden stop of flying. Once on the ground the aircraft with no aerodynamic drag just wants to keep on rolling. The aircraft is certified for most manoeuvres except snap stuff. Rolls require an entry of 80 kts while any looping needs 130 kts (very close to VNE) Nice days only.

The Cri Cri has full span flaperons which account for about 20 % of the total wing area. Take off setting is about 5 deg and landing around 15 deg, not much but they are extremely effective and must be lowered or raised very carefully.

The JPX engines are a basic French 210 cc two stroke producing 15 hp with the tuned pipes. The design is quite old and hp per cc is quite low compared to a modern two stroke, but the counter to that is that they are very reliable. The engines pull 5000 rpm static and wind up to 5500 rpm during the climb out. Red line is 6500 rpm. They are fitted with Tillotsen cCarbs, a la chainsaw, and as such can run upside down. LBW has a full inverted fuel system!

And the big question, what if one stops? The outcome really depends on temperature and pressure. A very high density altitude will result in maintenance of height ,just, but if things are a bit lower and cooler then a positive rate of climb is achievable. Climbing on one require close attention to the best rate of climb speed and getting rid of any flap. A sudden engine failure will result in quite a bit of easily controllable yaw. Single engine control is achievable down to stall speed. I generally keep the speed above the best rate of climb speed when operating low level.

The aircraft is small! Wing spam 4.5 metres and length of 4 metres. Getting in is a bit of an art but once you are there the cockpit is surprisingly spacious. I thought I may have felt a wee bit insecure in the aircraft due to it's size but do date this has not happened. The aircraft's size and blue and white paint job, whilst very well done, makes LBW virtually invisible to anyone else. It's size also makes the aircraft if seen appear to be further away than it actually is. You have to fly the aircraft very defensively working on the theory that you wont be seen till quite late.

It has been a pleasure to have access to the CriCri and I look forward to a few more hours in it. I always thought hang gliding was the purest form of flying but have changed my mind. Cri Cri-ing wins. LBW is trailerable in about 10 minutes and is booked on the ferry for it's trip to the National rally in 7-8 March 2015.

RAANZ 2015 national fly-in

Hosted by Central Hawkes Bay Aero Club
Waipukurau Airfield
March 7-8 2015

Advance notice- more details on our website as planning progresses

Air Safari Navigation Exercise

Pete Mullooly/Opotiki

On Saturday 29th of November a navigation exercise was conducted by the Eastern Bay of Plenty Aviation club.

The start was from the club apron and first heading was to Matata first turning point then onto the Rotorua lakes and then turning onto a course across Lake Okataina, Lake Tarawera, Lake Rotomahana, then a direct course for an overhead at Galatea. then to Anawhenua, then a direct course to Opotiki for a touch and ago. Leaving Opotiki flying west along the coast to Kohi point, onto Whale Island then directly over the Whakatane airport.

Observations of several points of interest had to be identified and a question answered. Visibility was good but conditions a wee bit bumpy due to the westerlies. All the contestants who entered were thoroughly rapt with this exercise. Following a BBQ de-briefing took place followed by prize giving. Some small prizes were given out and the overall winner of the Willy Bakker Trophy was Bevan Monk a student pilot

Thanks to all those who participated. Another of these competitions will be held around May when the weather is more suitable.

Pauanui Beach New Year Fly-In

3rd & 4th January

Resurrecting the popular relaxed, friendly event from summers past. Barbecue Saturday lunch (or Sunday rain day). Cadge a bed from the locals or pitch a tent on a friendly pilot's font lawn on the runway. Limited room for caravans/campers.

Contact Trevor Barrett
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trevor@allseasonsair.co.nz

Tecnam P92 Defect Report- vertical stabiliser spar

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FAI MICROLIGHT COMMISSION

Microlight Defect Report

Microlight Type and Model	TECNAM P92 ECHO SUPER
Total Time in Service (hrs)	Airframe: 913 HRS Engine: 413
Last inspection	Date: 10-10-14 Hours: 896 HRS
Reporter	Owner / (Inspector) / Safety Officer / Other:
Defect type	(Airframe) / Engine / Instruments / Other
Discovered during	Preflight / (inspcetion) / Maintenance / Flight / Other:
Where did the incident occur?	KAITAIA AIRFIELD
Describe the incident in detail (Include photos if possible) photos and cracked Spar sent to SOLO WINGS	KAC had a members flying competitions, day after comps noticed movement in Vertical Stabilator so remove covers for attachment inspection Found rear fin vertical spar cracked 75% across at attachment bolts on rear bulkhead
Describe the effect on airworthiness	Feel airworthiness would have been compromised if the doublers had cracked, The Spar doublers were still uncompromised
Describe remedial action taken	New Spar fitted to Vertical Stabilator

Adventure, recreation, and private aviation safety update 2014

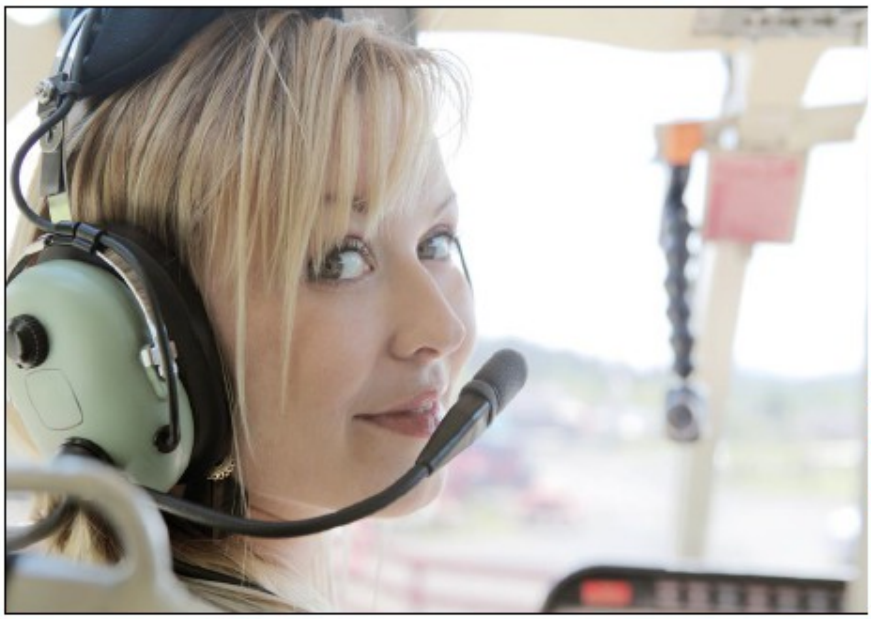
Joe Dewar/CAA

Attached to this email is a safety bulletin for participants in the adventure, recreation, and private aviation sectors. The bulletin is based mainly on occurrence data reported to the CAA, as well as some other sources. It provides an overview of the safety performance of the sector over time, covering the period from 1995 to 2014. It is being sent to all Part 115 operators, and all Part 149 organisations. It is likely that it will also be sent to aero clubs, where appropriate.

The main purpose of the bulletin is to develop a greater awareness of areas of safety risks in the sector. **To this end, Part 149 organisations are strongly encouraged to forward this bulletin on to your members.**

If you have feedback on the bulletin or ideas for future editions then I am keen to hear these over the next few weeks/months as this information gets out to operators and pilots.

Have an enjoyable Christmas and New Year and safe flying. Kind regards, Joe.



Adventure, recreation and private aviation

Safety Bulletin

Sector activity

Safety trends since 1995

Risk areas over Summer

SAFETY UPDATE **DECEMBER 2014**

This bulletin has been prepared by the safety analysis unit of the CAA, who perform analysis based largely on safety occurrence reporting. It offers an update on the safety trends in adventure, recreational and private aviation over 2014. Its objective is to make sure that all pilots, aircraft owners and operators in the sector are aware of the safety occurrences in the private and adventure aviation sector over time, in order for them to understand the risks that they face over the coming summer months, when accidents and major incidents occur much more frequently. The bulletin offers information on:

- Recreational and adventure aviation activity in New Zealand; and
- The safety performance record over time.

Adventure, recreation and private aviation in New Zealand

Right now there are **2,637** PPL holders with an active medical, and 311 RPL holders with the same.

On the register right now there **2,303** 'sport aircraft' in NZ, which makes up **46% of all aircraft** on the register:

Sport aircraft types in New Zealand:	
Aeroplane	173
Amateur Built Aeroplane	296
Amateur Built Glider	5
Amateur Built Helicopter	26
Balloon	64
Glider	290
Gyroplane	53
Hang Glider (in Part 115 operations)	18
Helicopter	5
Microlight Class 1	212
Microlight Class 2	836
Para Glider (in Part 115 operations)	69
Parachute	210
Power Glider	46
Total sport aircraft:	**2,303**

A recent survey conducted for the CAA investigated (amongst other things) **air travellers' participation in recreational and adventure aviation in NZ**. It also asked about their perceptions of safety in the sector.

18% of the NZ resident travellers surveyed had undertaken some kind of recreational aviation before;

13% had sky-dived before;

9% had been gliding before;

5% had flown in a microlight before; and

5% had been paragliding or hang gliding before.

The survey also covered international travellers to NZ. **25%** of them had undertaken some form of recreational aviation during their visit to NZ. **86%** of them reported that they felt 'extremely/very safe and secure' while doing so. The information shows that adventure aviation is a major part of the tourism sector – NZ's second largest industry – with **a quarter of visitors participating in the industry**. For the record, Statistics NZ estimates 2.8 million international tourists visited in 2014, and each year the number of tourists grows by 4% on average. The numbers illustrate why the NZ government is pushing so hard on improving safety in the adventure tourism industry. It is very, very important that we have a strong reputation for operating safely. Unfortunately in the past few years some major accidents in the aviation sector have damaged that reputation. The damage ripples throughout the whole country, and it can be massive. For example, after a 1989 mid-air collision in Milford Sound in which 6 Japanese tourists were killed, Japan issued a travel warning that advised against travel to New Zealand. The economic damage this is estimated to have wrought is around 30 million dollars[i] in lost revenue.

The safety data – recreational and adventure aviation

The table below shows the share of total accidents by operation type since 1995, ranked from smallest to largest:

Operation type	% of total accidents
Airline Operations - Medium Aeroplanes	1%
Airline Operations - Large Aeroplanes	1%
Airline Operations - Helicopter	2%
Airline Operations - Small Aeroplanes	3%
Sport Transport	**4%**
Agricultural Operations - Helicopter	5%
Private Operations - Helicopter	**5%**
Other Commercial Operations - Helicopter	7%
Agricultural Operations - Aeroplane	8%
Other Commercial Operations - Aeroplane	9%
Private Operations - Aeroplane	**13%**
Private Operations - Sport	**40%**

Altogether private aviation operations, in sport aircraft, aeroplanes, and helicopters account for **58% of total aviation accidents** recorded since 1995.

The table below sets out the share of total aviation fatalities in accidents since 1995, ranked from smallest to largest share:

Operation type	% of total fatalities
Airline Operations - Large Aeroplanes	2%
Agricultural Operations - Helicopter	3%
Airline Operations - Medium Aeroplanes	4%
Agricultural Operations - Aeroplane	5%
Airline Operations - Helicopter	5%
Private Operations - Helicopter	**6%**
Sport Transport	**6%**
Other Commercial Operations - Aeroplane	8%
Other Commercial Operations - Helicopter	9%
Airline Operations - Small Aeroplanes	11%
Private Operations - Aeroplane	**16%**
Private Operations - Sport	**24%**

Private operations account for **46% of all fatalities**. If the category of 'sport transport' (i.e. adventure aviation) is incorporated this rises to **52% of all fatalities**. Finally, adventure and recreation accidents account for a total **71% of serious injuries** in NZ aviation since 1995.

This bulletin moves now to a more specific examination of accidents in the adventure and recreation sector. The table below ranks the share of total accidents in adventure and recreational aviation by the type of aircraft involved in the accident:

Aircraft type	Total accidents	% of total accidents
Balloon	4	0%
Amateur-built helicopter	6	0%
Power glider	18	1%
Gyrocopter	19	1%
Microlight – class 1	60	5%
Amateur-built aeroplane	86	7%
Parachute	88	7%
Hang glider	90	7%
Helicopter	110	8%
Glider	125	10%
Paraglider	**132**	**10%**
Microlight – class 2	**246**	**19%**
Small aeroplane	**317**	**24%**
Grand Total	**1301**	**100%**

So the top three aircraft types in the sector that are involved in accidents are small aeroplanes, microlights and paragliders.

Below are the ranked shares of total fatalities by aircraft type:

Aircraft type	Total fatalities	% of total fatalities
Amateur-built helicopter	0	0%
Microlight – class 1	1	1%

Power glider	2	1%
Gyrocopter	4	2%
Hang glider	6	3%
Paraglider	6	3%
Parachute	10	5%
Balloon	14	7%
Glider	15	8%
Amateur-built aeroplane	20	10%
Helicopter	**20**	**10%**
Microlight – class 2	**28**	**14%**
Small aeroplane	**69**	**35%**
Grand Total	195	100%

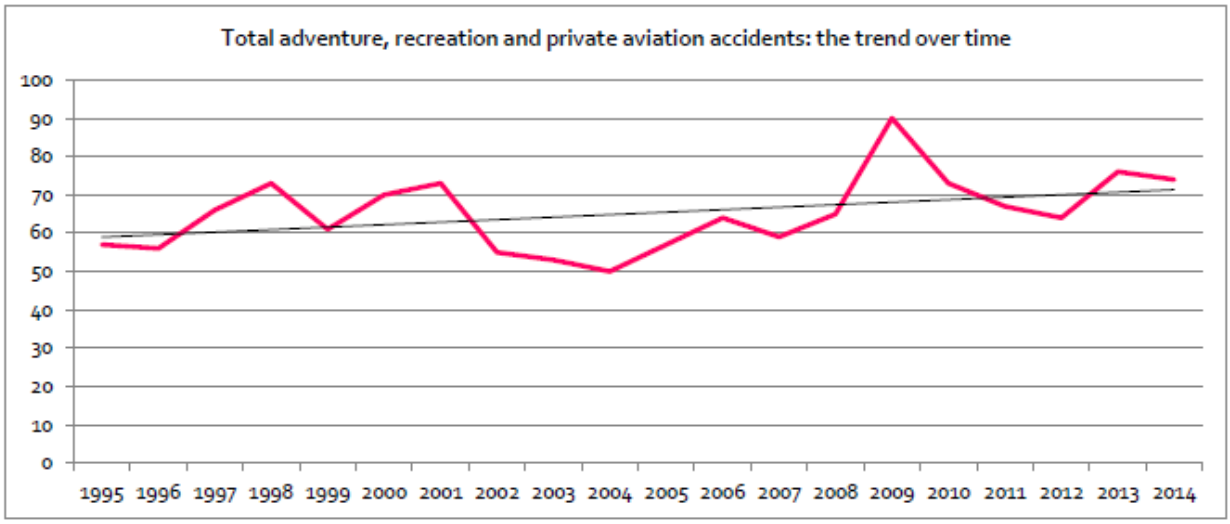
Finally in the adjacent table are the ranked shares of serious injuries by aircraft type:

Aircraft type	Total serious injuries	% of total serious injuries
Amateur-built helicopter	0	0%
Power glider	0	0%
Balloon	1	0%
Gyrocopter	4	1%
Microlight – class 1	5	2%
Amateur-built aeroplane	6	2%
Helicopter	17	6%
Glider	23	8%
Small aeroplane	26	10%
Microlight – class 2	27	10%
Hang glider	**45**	**17%**
Parachute	**47**	**17%**
Paraglider	**70**	**26%**
Grand Total	**271**	**100%**

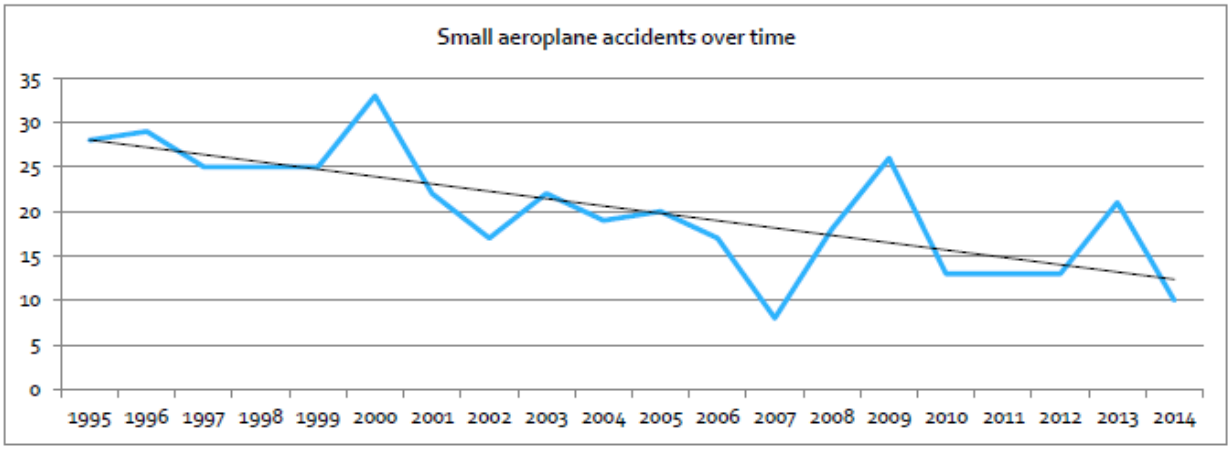
Accidents involving hang gliders, parachutes, and paragliders make up 61% of the serious injuries incurred in the adventure and recreation sector since 1995.

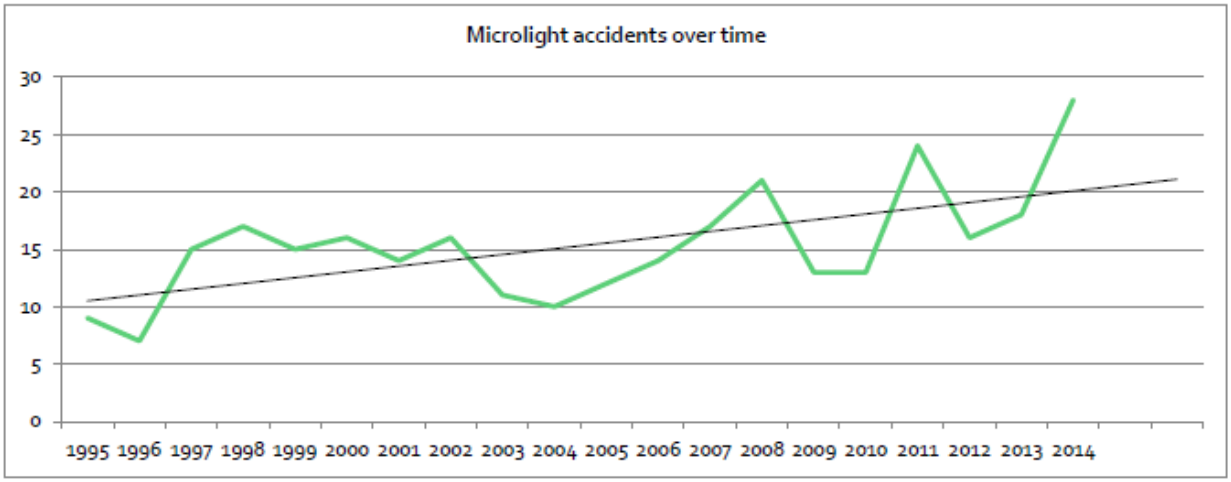
Trends over time

Here we examine the accident and injury data for the relevant categories of operation **over time**. First of all, below are the total accidents, fatalities and serious injuries in recreational and adventure aviation over time:



The chart shows that across the sector there is a gradual upward trend in the overall numbers of accidents. In the charts on the next page you can see the trend for the different types of aircraft that operate in the sector.


Small aeroplane accidents over time
35
30
25
20
15
10
5
0
1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014


Microlight accidents over time
30
25
20
15
10
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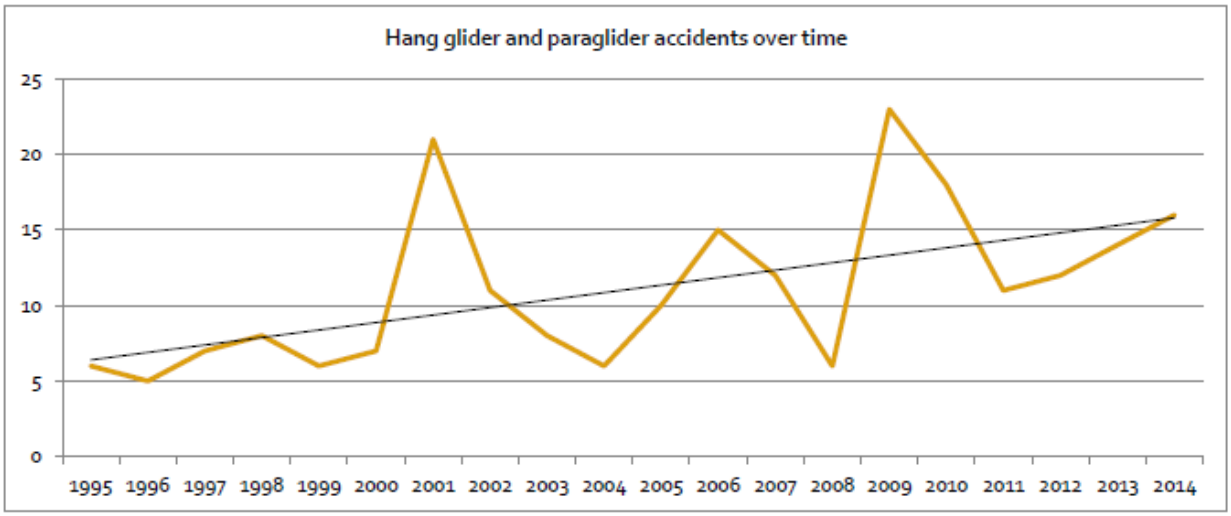
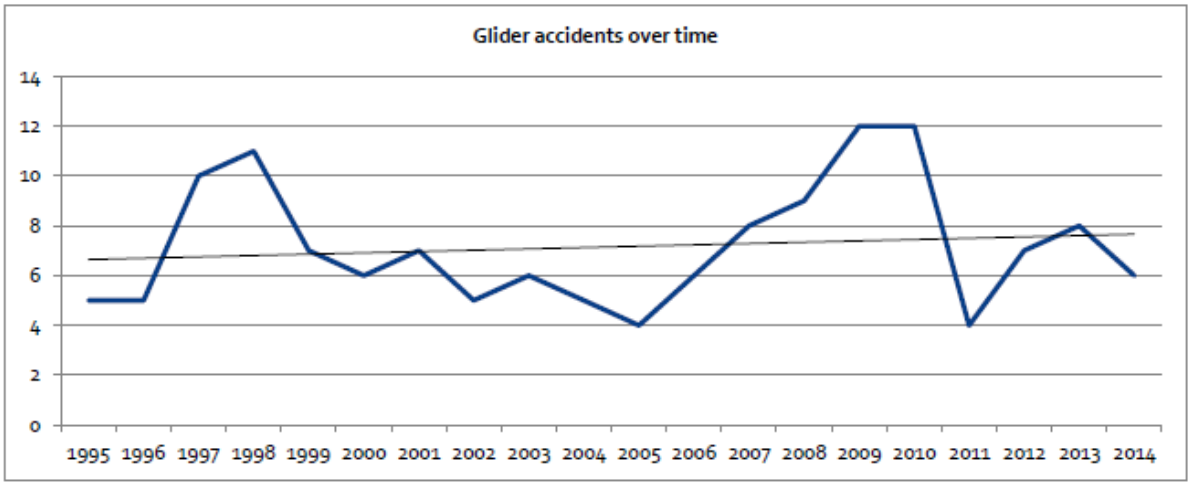
0
1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014


Hang glider and paraglider accidents over time
25
20
15
10
5
0
1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014


Glider accidents over time
14
12
10
8
6
4
2
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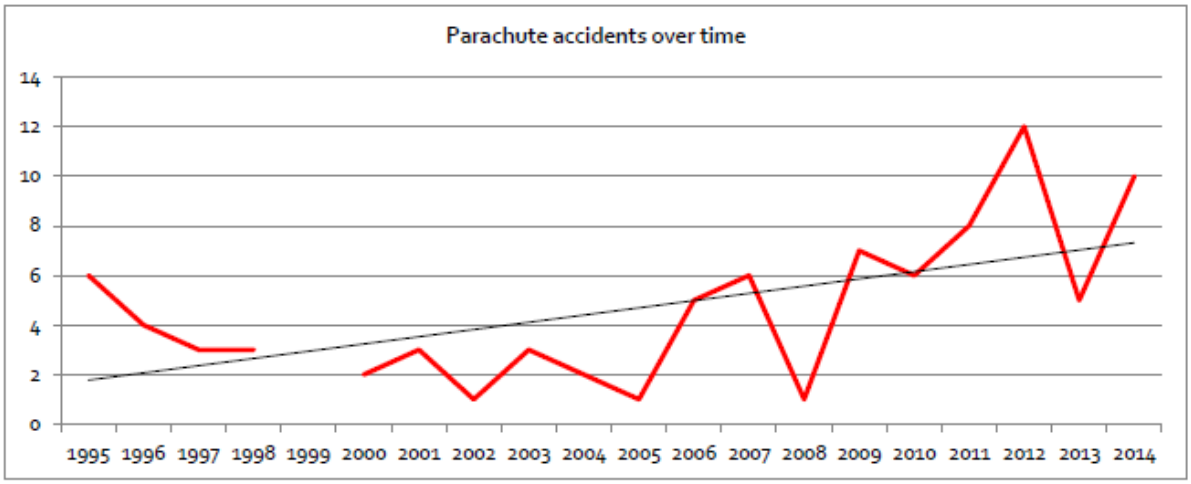
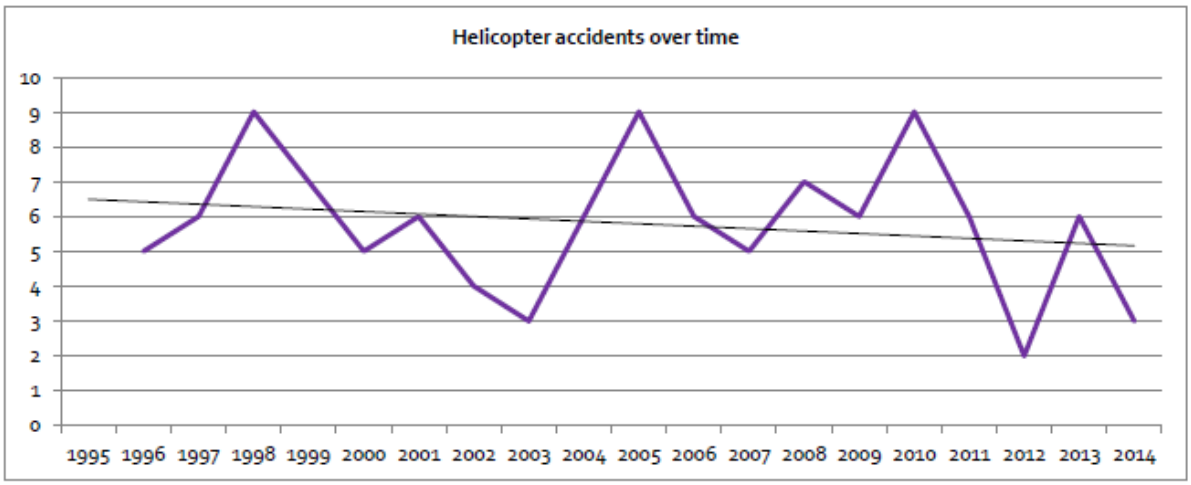
1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014


Parachute accidents over time
14
12
10
8
6
4
2
0
1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014


Helicopter accidents over time
10
9
8
7
6
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4
3
2
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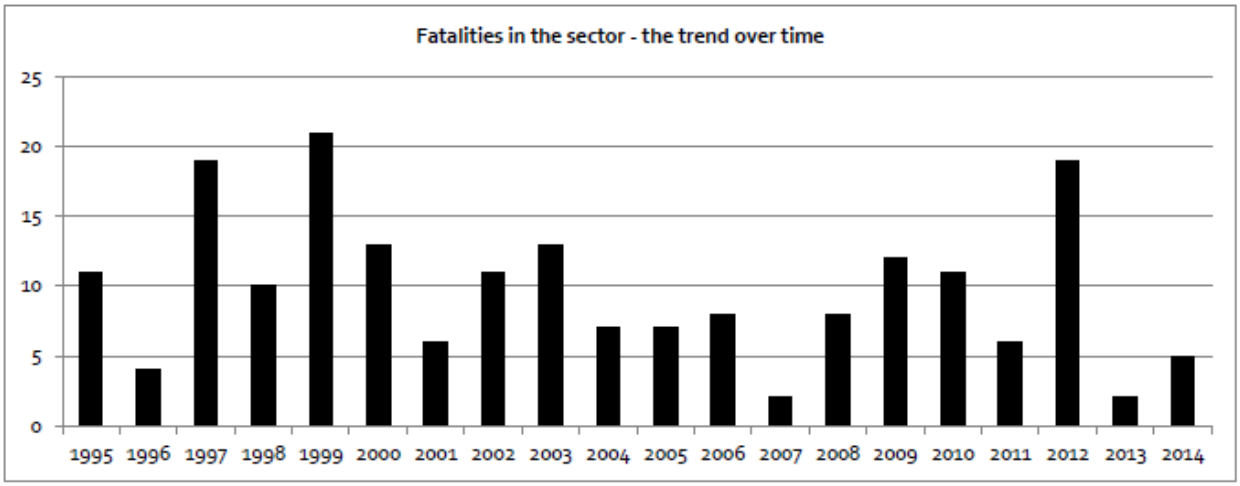
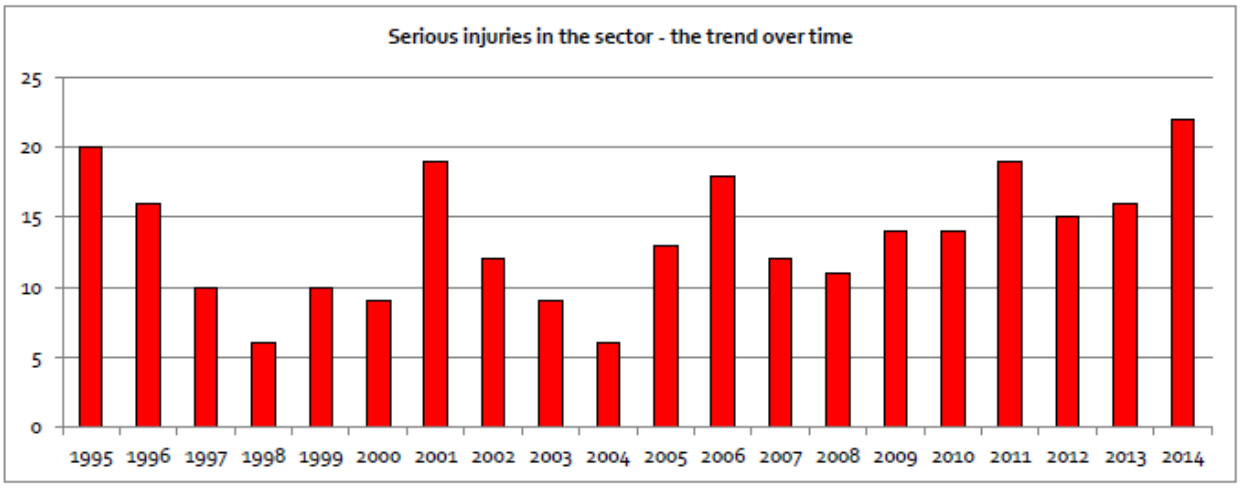
1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014

Membership changes





Main points so far

- A large amount of New Zealanders, some 10%, participate in some kind of adventure or recreational activity at least once in their lifetime.
- A quarter of international tourists undertake some kind of adventure or recreational aviation during their visit.
- The sector accounts for 58% of all aviation accidents, 52% of fatalities and 71% of serious injuries.
- The numbers of accidents per year are trending upward, across most aircraft types.

What about accident *rates*? We have estimated that the following accident rates per 100,000 flying hours prevailed for the 36 months to June 2014 (i.e. 3-year accident rate):

Sport transport (115 ops)	**13.9**/100,000 hours
Private aeroplane ops	**35.8**/100,000 hours
Private helicopter ops	**25.5**/100,000 hours
Private sport ops (excluding microlights, gliders, and all other aircraft not required to report operating statistics).	**27.3**/100,000 hours

On operating statistics, it's concerning that reporting rates are in major decline for the private and recreation sector. Below is the percentage of returns for each relevant aircraft category for the 2013 calendar year:

Aircraft type	% with statistics return in 2013

Small aeroplanes	45%
Helicopters	55%
Sport aeroplanes	38%
Balloons	37%
Part 115 hang gliders	82%
Part 115 paragliders	55%
Part 115 parachutes	65%

The primary purpose of this safety notice is to give you an overview of the sector as a whole and its safety performance over time. With this information in mind though, it's pertinent to turn to the future, particularly the next few months.

Month	Total accidents	% of total
January	205	16%
February	153	12%
March	138	11%
April	110	8%
May	62	5%
June	57	4%
July	66	5%
August	67	5%
September	72	6%
October	107	8%
November	127	10%
December	137	11%
Grand Total	1301	

With 38% of all adventure, recreation and private accidents occurring in the period of January through to March, it is timely to consider some of the risks posed. Obviously the increase in accidents is linked to the increase in activity over this time. But that is no reason to be complacent. **Consider this: based on the data used to create this report, this sector can expect to have at least 2 fatal accidents from January to March 2015.** In fact since 1995, *not one year has passed where there hasn't been a fatal accident in the sector over those 3 months.*

Further, based on that same data, at least 5 people will sustain serious injuries from accidents in the same period.

Underlying the accidents over the period are the 'usual suspects'. Weather conditions are a major factor: in major accidents, deteriorating or marginal conditions often play a role. In a huge number of more minor accidents, wind is a factor, be it encounters with windshear or changes in wind direction. There are a number of resources available to ensure that you reduce your risks of getting into trouble with weather conditions. Key among them are the following GAP boolets:

- VFR Met
- Mountain Flying
- Takeoff and Landing Performance

These are all available at:
http://www.caa.govt.nz/safety_info/good_aviation_practice.htm

If you are an individual pilot or aircraft owner, please take the time to consider these, if you plan to undertake flying over the next few months. If you are an operator or an organisation/club in the sector, then please consider ways of promulgating the information in this bulletin to your members.

[1] Nancy Swarbrick. 'Air crashes - Small aircraft accidents', Te Ara - the Encyclopedia of New Zealand, updated 13-Jul-12
URL: http://www.TeAra.govt.nz/en/air-crashes/page-4

Rules of Thumb

Here are our top tips.

QNH Changes

Rapid decreases in QNH, either actual or forecast, normally mean strong winds and possibly bad weather on the way.

Similarly, a signif cant QNH difference between two near locations, normally means strong winds.

Pilot Reports

Pilot reports are a very useful but underutilised report. If you come across w eather that is different from forecast (better or worse) give a report over the FISCOM frequency – you could benef t from another's report. Typically they include information on hazardous condition like windshear or turbulence.

True or Magnetic

Make sure you know which reports use degrees true, and which use magnetic to report wind direction. Anything provided directly by an air traff c controller will be in magnetic (ATIS, SPAR or landing report), everything else is in true.

2000 ft Wind

The 2000 foot wind is a good indicator of the gradient f ow. A signif cant difference between the surface w ind and the 2000 foot wind can indicate local wind effects, possible turbulence and/or w indshear.

Rain Radar

This rain rader picture seems to show rain in Cook Strait, but no, this is sea spray being whipped up by the fresh northerly funnelling through the Strait. Some of the clues that identify this phenomenon are the straight edges and the shadow behind Kapiti Island.

Cruising Altitude

A general rule of thumb is that winds at higher altitudes (7000 feet or more) are from the westerly quarter.

In f ne weather:

- Heading south – f y low (2500 feet and below). This keeps you out of any strong headwinds, and you may pick up a tailwind.
- Heading north – f y high (as high as airspace, aircraft, and cloud cover permit).

Local Winds

New Zealand meteorology is strongly dominated by local wind effects, for example anabatic winds (uphill), katabatic winds (downhill), sea and lake breezes, and venturi effects. Try and understand any effect that enhances a katabatic or anabatic w ind, for example a sea or lake breeze.

Monitor the surface wind – you never know when you might need to land into it!

Temperature–Dew Point Split

The temperature–dew point difference (split) is an indication of the amount of water vapour in the air. When they are the same or close, it normally means either low cloud, fog, or precipitation. The smaller the split, the lower the cloud base. Pay particular attention late in the day when temperatures can drop rapidly, especially in winter.

Forecast Accuracy

A forecast is just that – it is not a guarantee. Apply some common sense and a margin to the forecast. The conditions could be better or w orse than forecast.

If the forecast indicates bad weather is on the way, the issue may be one of timing rather than severity. Don't plan on arriving ten minutes before a forecast change – you could easily get caught out because the change happened 30 minutes early.

Precautions for Jabiru powered aircraft - CASA Media Release

NOTE- this is an advisory only for NZ pilots. It is not mandatory for NZ at this stage.

The Civil Aviation Safety Authority will place a set of precautionary operating limitations on aircraft powered by Jabiru engines.

These precautionary limitations follow a high number of Jabiru engine failures and power loss incidents, some of which resulted in aircraft forced landings. More than 45 Jabiru engine failures or in-flight engine incidents have been reported in 2014, with CASA recently becoming aware of incidents in previous years.

Problems with Jabiru engines include failures of through bolts, flywheel bolts and valve train assemblies, as well as cylinder cracking. The failures affect a range of Jabiru engine models and have occurred in aircraft used in different flying activities, although many have been reported in aircraft used for flying training.

CASA is currently working with Jabiru and other stakeholders to identify the causes of the engine problems and to implement appropriate solutions. Causes being investigated include design and mechanical issues, how aircraft are flown, and maintenance-related issues.

While this investigative work is ongoing, the precautionary limitations are primarily intended to reduce risks for people on the ground and trainee pilots flying solo. The limitations also ensure that trainee pilots flying solo and passengers understand and accept the risk of a Jabiru engine failure.

The limitations:

- **Restrict flights to day time under the visual flight rules**
- **Require aircraft to be flown so they can at all times glide clear of a populous area**
- **Require passengers and trainee pilots flying solo to sign a statement saying they are aware of and accept the risk of an engine failure**
- **Require trainee pilots to have recently and successfully completed engine failure exercises before solo flights.**

CASA consulted with the aviation community on the Jabiru limitations, receiving more than 630 comments. Many pilots maintained they had the right to accept the risk of engine power loss and argued that this right should be extended to passengers and trainee pilots. CASA revised the proposed limitations after taking account of the consultation comments and other relevant information, and considers that the limitations now to be made appropriately manage the safety risks.

The full CASA legal document can be viewed here.

EASA SID 2014-34: Rotax 912 and 914 series- possible exceedance of temperature limits

This relates to engines with the new cylinder head design with the temperature monitoring point now being the [lower] CT coolant temperature rather than the [higher] CHT cylinder head temperature. Gauge limits need to be adjusted to reflect the revised limits.

Applicability:
All BRP-Powertrain 912 A/F/S and 914 F engines with the following serial numbers (S/N):

- 912 A S/N from 4.410.982
- 912 F S/N from 4.413.020
- 912 S S/N from 4.924.544
- 914 F S/N from 4.421.178

and BRP-Powertrain 912 A/F/S and 914 F engines on which cylinder heads with the following Part Numbers (P/N) were installed as replacement parts at cylinder position 2 or 3 since 01 January 2013:

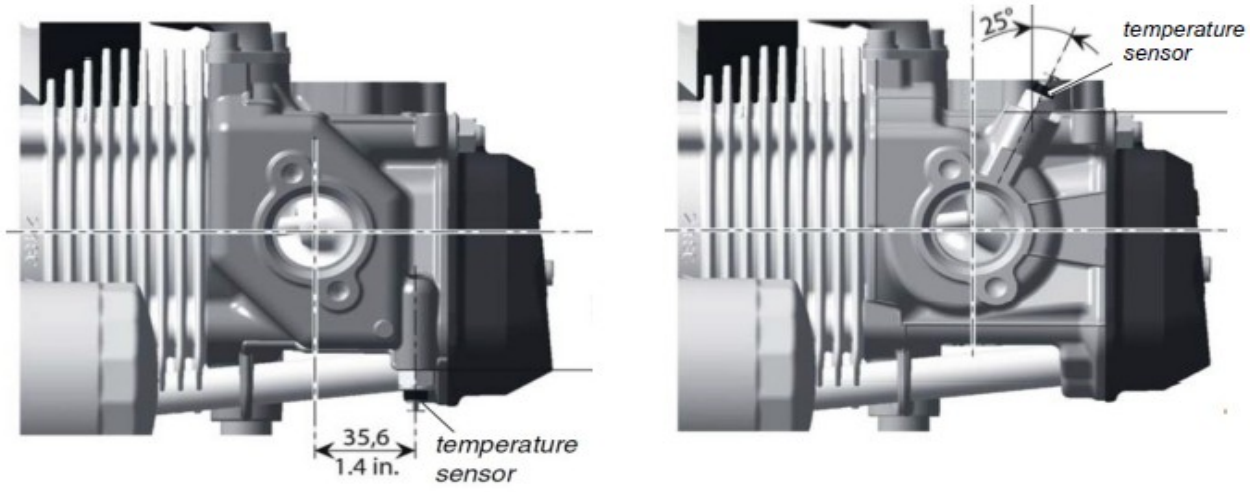
- 912 A/F: P/N 413235 or 413236
- 912 S: P/N 413185
- 914 F: P/N 413235 or 413236

The reported conditions are the result of an insufficiently communicated engine design change which altered the engine/aircraft interfaces by substituting the previous cylinder head temperature **(CHT) measurement (limit temperature 135°C/150°C)** with a **coolant temperature (CT) measurement (limit temperature 120°C)**.

This design change is currently not identified by the engine model designation or the engine P/N but only through the cylinder head P/N and the position of the temperature sensor:

- CHT measurement ◊ temperature sensor points downward
- CT measurement ◊ temperature sensor points upward

Picture 1 – CHT versus CT measurement



Old cylinder head design, CHT measurement

New cylinder head design, CT measurement

The full document can be viewed here.

The invasion of the drones

With quadcopters being the Christmas gift of choice, you can expect to see more of these flying around, and possibly in your airspace. If you do, make an effort to contact the operator and help them comply with the rules.

There is more to flying your remotely piloted aircraft (RPAS, UAV or drone) than you think!
Please check the CAA RPAS website

As a general guide, you can fly your UAV

- In uncontrolled airspace below 400 feet above ground level
- During daylight hours
- Within visual line of sight (rule part 101.209 meteorological limitations and 101.213 right of way)
- Clear of all manned aircraft, persons & property
- Outside of airspace restricted areas
- Not within 4km of any aerodrome
- If you know the CAA regulations

More tips

- Make sure you have read and understood the relevant Civil Aviation Rules, especially Part 101 Model aircraft operating rules
- Never operate your aircraft in a manner that creates a hazard to other aircraft or persons or property (Rule 101.13)
- Know how to read a Visual Navigation Chart (VNC). These can be purchased online. Your local Aero club, certified training instructor, or a friend who is a qualified pilot will be able to advise on how to read a VNC.
- Before you fly, **check for all relevant airspace restrictions**, e.g. controlled airspace, low flying zones, danger areas, restricted areas, and military operational areas
- Know your responsibilities as pilot-in-command of an aircraft
- Abort procedures must be in place in the event of a systems failure – know how your UAV will behave if a failure occurs
- **Not within 4 km** of any defined area of land or water intended or designed to be used either wholly or partly for the landing, departure, and surface movement of aircraft e.g. aerodromes, airfields, heliports
- If you cannot see it – it is not safe to fly. Always remain within unaided visual line-of-sight of your aircraft, unless approved otherwise by the CAA

Contact the CAA

Take a look at the CAA's Flying with Control brochure and if in doubt give the CAA a shout! Call them on 04 560 9400, or email info@caa.govt.nz

Membership changes

Winston Copland	Southern Recreational Aircraft Club	Advanced National	Upgrade
Bryan Marr	Stratford Sport Fliers Club	Flight Instructor	Upgrade
Douglas St George	Mercury Bay Aero Club	Advanced Local	Upgrade
Graeme Allen	Feilding Flying Club	Advanced National	Upgrade
Matthew Simpson	Central Hawkes Bay Aero Club	Advanced National	Upgrade
Theunis van Loggerenberg	Whangarei Flying Club	Advanced National	Upgrade
Frank Barker	Canterbury Recreational Aircraft Club	Novice	Exam
Alwyn Sarginson	Fiordland Aero Club	Advanced National	Joined
Jennifer Carruthers	Fiordland Aero Club	Novice	Joined
Zenji Natusch	Feilding Flying Club	Novice	Joined
Simone Hewson	Wairarapa Ruahine Aero Club	Novice	Joined
Keith Stanley	Geraldine Flying Group	Novice	Joined
Gregory King	Bay of Plenty Microlight Assn	Novice	Joined
Gary Hawkins	North Otago Aero Club	Novice	Joined
Caroline Goodwin	Hawkes Bay Microlight Club	Novice	Joined

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